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IS 4545-8 (1983): Methods of measurement on receivers for television broadcast transmissions: Part8 Compatibility with audio visual recording equipment [LITD 7: Audio, Video and Multimedia Systems and Equipment]



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“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

**METHODS OF MEASUREMENT ON
RECEIVERS FOR TELEVISION BROADCAST
TRANSMISSIONS**

PART 8 COMPATIBILITY WITH AUDIO VISUAL RECORDING EQUIPMENT

(First Revision)

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**INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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Indian Standard

METHODS OF MEASUREMENT ON RECEIVERS FOR TELEVISION BROADCAST TRANSMISSIONS

PART 8 COMPATIBILITY WITH AUDIO VISUAL RECORDING EQUIPMENT

(*First Revision*)

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Indian Standard

METHODS OF MEASUREMENT ON RECEIVERS FOR TELEVISION BROADCAST TRANSMISSIONS

PART 8 COMPATIBILITY WITH AUDIO VISUAL RECORDING EQUIPMENT

(First Revision)

0. FOREWORD

0.1 This Indian Standard (Part 8) (First Revision) was adopted by the Indian Standards Institution on 6 December 1983, after the draft finalized by the Radio Communications Sectional Committee had been approved by the Electronics and Telecommunication Division Council.

0.2 The first version of IS : 4545 had covered the methods of measurement for television broadcast receivers having monochrome vision reception. With the introduction of colour television receivers, this standard is now being revised to make it applicable to receivers designed, for both monochrome and colour vision reception and published in a number of parts to deal with different aspects of characteristics of television receivers.

0.3 This standard (Part 8) covers methods of measurements for testing compatibility of television receiver with audio visual recording equipment. Other parts in the series are:

Part 1 General considerations

Part 2 Tuning properties and general measurements

Part 3 Geometrical properties of the picture

Part 4 Synchronizing quality

Part 5 Sensitivity

Part 6 Selectivity and response to undesired signals

Part 7 Fidelity

Part 9 Electrical and acoustic measurements at audio-frequency

0.4 This standard (Part 8) is largely based on IEC Publication 107-1 (1977) Recommended methods of measurement on receivers for television broadcast transmissions: Part I General considerations electrical measurements other than those at audio-frequencies, issued by the International Electrotechnical Commission.

0.5 In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS : 2-1960*.

*Rules for rounding off numerical values (revised).

1. SCOPE

1.1 This standard (Part 8) covers methods of measurements for testing compatibility of television receivers with audio visual recording equipment.

1.2 This standard (Part 8) shall be read in conjunction with IS : 4545 (Part 1)-1983*.

2. FLAGGING

2.1 Definition — Disturbances to the line synchronizing pulse train may occur with certain audio visual recording equipment, for example, due to head switching and/or changes in tape tension. These can give rise to a fluctuating horizontal displacement at the top of the picture

known as flagging. The magnitude and extent of the effect for an input signal with a given amount of disturbance depends upon the design of the horizontal scan circuit.

2.2 Method of Measurement — Measurement is carried out on a representative channel of those in which the receiver is designed to operate. The receiver must be tuned in accordance with 2 of IS : 4545 (Part 2) - 1983* and is adjusted to provide standard video output voltage. A test pattern is applied and the receiver adjusted for optimum decoding in the case of a colour receiver. The radio-frequency signal is applied to the input terminals of the receiver through a suitable matching network. The input signal level is adjusted between those levels defined

*Methods of measurement on receivers for television broadcast transmissions : Part 1 General considerations (first revision).

*Methods of measurement on receivers for television broadcast transmissions: Part 2 Tuning properties and general measurements (first revision).

in 5 and 15 of IS : 4545 (Part 5) - 1983* so that noise effects do not influence measurement. The radio-frequency signal is modulated by a video signal including vertical bars and having the controlling master oscillator capable of frequency modulation. The master oscillator is frequency modulated by a rectangular signal of such mark/space ratio that the first 50 lines of each field are modulated in frequency selectably above or below the nominal value by 50 Hz, the remainder of the field being at nominal line scan frequency. The amount of any horizontal disturbance at the top of the displayed picture for both higher and lower modulation frequencies is measured peak-to-peak and expressed as a percentage of the active line period. The form of the disturbance is recorded with the result, that is, its shape and the extent to which it persists down the field. If the receiver has selectable horizontal control circuit characteristics such as time constants, measurements should be made with all available control positions.

Where the receiver has a video frequency input socket, the signal having the master oscillator frequency modulated should be applied thereto, through a suitable matching network as required by the input impedance stated by the manufacturer. The input signal level should be either that given by the manufacturer or where this is not known, at such a level that gives standard video output voltage. The measurement process in other respects is as with the antenna input condition.

3. HORIZONTAL WAVE

3.1 Definition — Certain audio visual recording equipment can cause field rate cyclic disturbances to the line synchronizing pulse train, for example, lack of ideal centring in video disc players. This can give rise to a displacement of horizontal scanning lines over a region of the display picture. The magnitude and extent of

the effect for an input signal with a given amount of disturbance depends upon the design of the horizontal scan circuit.

3.2 Method of Measurement — Measurement is carried out on a representative channel of those in which the receiver is designed to operate. The receiver must be tuned in accordance with 2 of IS: 4545 (Part 2)-1983* and is adjusted to provide standard video output voltage. A test pattern is applied and the receiver adjusted for optimum decoding in the case of a colour receiver. The radio-frequency signal is applied to the input terminals of the receiver through a suitable matching network. The input signal level is adjusted between those levels defined in 5 and 15 of IS : 4545 (Part 5) - 1983† so that noise effects do not influence measurement. The radio-frequency signal is modulated by a video signal including vertical bars and having the controlling master oscillator capable of frequency modulation. The master oscillator is frequency modulated by a field frequency sinusoidal signal and adjustable phase relative to the field synchronizing signal, and of such an amplitude that the peak-to-peak frequency deviation is 50 Hz. The phase is adjusted to bring the maximum disturbance of the displayed picture approximately to the centre of the screen. The maximum amount of any horizontal disturbance is measured peak-to-peak and expressed as a percentage of the active line period. The form of the disturbance is also recorded with the results, that is, its shape and its extent down the field.

Where the receiver has a video frequency input socket, the signal having the master oscillator frequency modulated should be applied thereto through a suitable matching network as required by the input impedance stated by the manufacturer. The input signal level should be either that given by the manufacturer or where this is not known, at such a level that gives standard video output voltage. The measurement process in other respects is as with the antenna input condition.

*Methods of measurement on receivers for television broadcast transmissions: Part 5 Sensitivity (*first revision*).

*Methods of measurement on receivers for television broadcast transmissions: Part 2 Tuning properties and general measurements (*first revision*).

†Methods of measurement on receivers for television broadcast transmissions: Part 5 Sensitivity (*first revision*).



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